

**Instructor:** G. J. Babu, 417C Thomas Building

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Office Hours: Appointment by email (or just stop by)

**Textbook and reference books:**

1. T. S. Ferguson (1996). *A course in large sample theory*, Chapman & Hall/CRC, New York.
2. E. L. Lehman (1999, Third printing 2004). *Elements of large-sample theory*, Springer, New York. (Online Content of this book is available from Penn State Libraries. Click <http://www.netLibrary.com/urlapi.asp?action=summary&v=&bookid=104550> to access this electronic book provided through the Access Pennsylvania Database project.)
3. P. K. Sen and J. M. Singer (1992). *Large sample methods in statistics: an introduction with applications*, Chapman & Hall, New York.

**Course description:**

This course covers most standard statistical asymptotic theory. It covers weak and strong convergence of random variables in both the univariate and multivariate settings, Slutsky's theorem(s), delta method, the Lindeberg-Feller central limit theorem, likelihood-based estimation and testing, and some selected topics such as sample quantiles. It is a mathematically rigorous course and major results are proved. Many common applications of the theory in mathematical statistics will be discussed.

**Grading:**

There will be two in-class midterms (each 20% of the grade), a comprehensive final exam (30% of the grade), and homework (30% of the grade). The exams will be closed-book. You may bring a 8.5x11in sheet of notes.

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All Penn State and Eberly College of Science policies regarding academic integrity apply to this course. See <http://www.science.psu.edu/academic/Integrity> for details.